

**AMENDMENTS TO THE CLAIMS:**

Please cancel claims 9, 10, and 16 –23 without prejudice or disclaimer, and amend claims 1 and 3, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently amended): A method of producing a semiconductor device incorporating a capacitor structure that includes a ferroelectric thin film, comprising:

epitaxially forming, on a single crystalline substrate having a surface suited for growing thereon a thin film layer of ferroelectric single crystal having a plane (111), a ferroelectric single crystalline thin film containing Pb and having a plane (111) in parallel with the surface of the substrate ~~or a ferroelectric polycrystalline thin film containing Pb and oriented parallel with the plane (111) in parallel with the surface of the substrate~~, and forming part of a circuit of a semiconductor device, to thereby fabricate a single crystalline substrate having said ferroelectric thin film containing Pb and said part of the circuit of the semiconductor device; and

bonding said single crystalline substrate to another substrate on which another circuit of the semiconductor device has been formed in advance, to couple the two circuits together to thereby obtain a semiconductor device incorporating a capacitor structure that includes a ferroelectric thin film.

Claim 2 (Previously presented): A method of producing a semiconductor device according to claim 1, comprising:

(1) epitaxially forming, on a single crystalline substrate, a ferroelectric single crystalline thin film layer containing Pb and having a plane (111) in parallel with the surface of the substrate, patterning said thin film layer to thereby form isolated ferroelectric thin films of a predetermined shape on the single crystalline substrate, forming one electrode of a capacitor of a predetermined shape positioned on said ferroelectric thin film, and forming part of a circuit of a semiconductor device on the single crystalline substrate, to thereby fabricate a single crystalline substrate having thereon said ferroelectric thin film containing Pb, said one electrode and said part of the circuit of the semiconductor device;

(2) fabricating a semiconductor substrate having another circuit of the semiconductor device formed;

(3) bonding said single crystalline substrate to said semiconductor substrate to couple the circuits of the two substrates together; and

(4) removing said single crystalline substrate to expose the ferroelectric thin film, and forming another electrode of the capacitor on the ferroelectric thin film that is exposed.

Claim 3 (Currently amended): A method of producing a semiconductor device according to claim 1, comprising:

(1) epitaxially forming an electrically conducting thin film layer on a single crystalline substrate having through holes, epitaxially forming, on said electrically conducting thin film layer, ferroelectric single crystalline thin film containing Pb and having a plane (111) in parallel with the surface of the substrate, ~~or a ferroelectric polycrystalline thin film layer containing Pb and oriented parallel with the plane (111) in parallel with the surface of the substrate~~, patterning said electrically

conducting thin film layer and said ferroelectric thin film layer to thereby form isolated ferroelectric thin films of a predetermined shape and one electrode of a capacitor of a predetermined shape, forming another electrode of the capacitor on said ferroelectric thin film, and forming part of a circuit of a semiconductor device so as to pass through the holes in said single crystalline substrate, to thereby fabricate a single crystalline substrate comprising a capacitor structure constituted by said ferroelectric thin film containing Pb and a pair of electrodes holding the ferroelectric thin film therebetween, and said part of the circuit of the semiconductor device;

(2) fabricating a semiconductor substrate having another circuit of the semiconductor device formed; and

(3) bonding said single crystalline substrate to said semiconductor substrate to couple the circuits of the two substrates together.

Claim 4 (Previously Presented): A method of producing a semiconductor device according to claim 1, wherein said ferroelectric material is PZT ( $\text{PbZr}_x\text{Ti}_{1-x}\text{O}_3$ ), PLZT ( $\text{Pb}_y\text{La}_{1-y}\text{Zr}_x\text{Ti}_{1-x}\text{O}_3$ ), PLCSZT ( $(\text{Pb}, \text{La}, \text{Ca}, \text{Sr})(\text{Zr}, \text{Ti})\text{O}_3$ ) or a substance derived therefrom by adding Nb thereto.

Claim 5 (Previously Presented): A method of producing a semiconductor device according to claim 1, wherein as said single crystalline substrate, a single crystalline substrate having a plane (111) on which the ferroelectric thin film is to be formed, or a single crystalline substrate having an offset angle from the plane (111) is used.

Claim 6 (Original): A method of producing a semiconductor device according to claim 5, wherein said single crystalline substrate is an MgO or SrTiO<sub>3</sub> single crystalline substrate.

Claim 7 (Previously presented): A method of producing a semiconductor device according to claim 1, wherein as said single crystalline substrate, an  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> single crystalline substrate having a plane (0001) on which the ferroelectric thin film is to be formed, or an  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> single crystalline substrate having an offset angle from the plane (0001), is used.

Claim 8 (Previously Presented): A method of producing a semiconductor device according to claim 1, wherein as said single crystalline substrate an MgAl<sub>2</sub>O<sub>4</sub> single crystalline substrate having a plane (001) on which the ferroelectric thin film is to be formed, is used.

Claim 9-10 (Canceled).

Claim 11 (Previously Presented): A method of producing a semiconductor device according to claim 1, wherein as said single crystalline substrate a single crystalline silicon substrate having a plane {111} on which the ferroelectric thin film is to be formed or a single crystalline silicon substrate having an offset angle from the plane {111}, is used.

Claim 12 (Previously Presented): A method of producing a semiconductor device according to claim 1, wherein as said single crystalline substrate, a single crystalline silicon substrate having a

plane {100} on which the ferroelectric thin film is to be formed, or a single crystalline silicon substrate having an offset angle from the plane {100}, is used.

Claim 13 (Previously Presented): A method of producing a semiconductor device according to claim 11, wherein said ferroelectric thin film is epitaxially grown directly on the ferroelectric thin film-forming surface of said single crystalline substrate.

Claim 14 (Previously Presented): A method of producing a semiconductor device according to claim 11, wherein said ferroelectric thin film is epitaxially grown through a buffer layer formed on the ferroelectric thin film-forming surface of said single crystalline substrate.

Claim 15 (Original): A method of producing a semiconductor device according to claim 14, wherein said buffer layer is formed of MgO, yttrium-stabilized zirconia,  $\text{MgAl}_2\text{O}_4$ , CaO,  $\text{SrTiO}_3$  or  $\text{CeO}_2$ , and said ferroelectric thin film is grown on the plane (111) or the plane (0001) thereof.

Claims 16-23 (Canceled).